wherein the targeting construct, when introduced into murine embryonic stem cells, results in a transgenic mouse having a disruption in a sulfotransferase gene, wherein the transgenic mouse when homozygous for a disruption in a sulfotransferase gene exhibits a behavior abnormality.

27. (New) The targeting construct of claim 26, wherein the targeting construct further comprises a screening marker.

28. (New) A cell transformed with the targeting construct of claim 26.

29. (New) A method of producing a targeting construct, the method comprising:

(a) obtaining a first polynucleotide sequence homologous to a first region of a sulfotransferase gene;

(b) obtaining a second polynucleotide sequence homologous to a second region of a sulfotransferase gene;

(c) providing a vector comprising a selectable marker; and

(d) inserting the first and second sequences into the vector, to produce the targeting construct,

wherein the selectable marker is located between the first and second polynucleotide sequences, and wherein the targeting construct, when introduced into murine embryonic stem cells, results in a transgenic mouse having a disruption in a sulfotransferase gene, wherein the transgenic mouse when homozygous for a disruption in a sulfotransferase gene exhibits a behavior abnormality.

30. (New) A method of producing a targeting construct, the method comprising:

(a) providing a polynucleotide sequence homologous to a sulfotransferase gene;

(b) generating two different fragments of the polynucleotide sequence;

(c) providing a vector having a gene encoding a selectable marker; and

(d) inserting the two different fragments into the vector to form the targeting construct,

wherein the selectable marker is located between the two different fragments, and

wherein the targeting construct, when introduced into murine embryonic stem cells, results in a transgenic mouse having a disruption in a sulfotransferase gene, wherein the transgenic mouse when homozygous for a disruption in a sulfotransferase gene exhibits a behavior abnormality.

31. (New) A method of producing a transgenic mouse comprising a homozygous disruption in a sulfotransferase gene, the method comprising:

(a) providing a mouse embryonic stem cell comprising a disrupted sulfotransferase gene;

(b) introducing the mouse embryonic stem cell into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

(c) breeding the chimeric mouse to produce the transgenic mouse,

wherein the transgenic mouse when homozygous for a disruption in a sulfotransferase gene exhibits a behavior abnormality.

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32. (New) A transgenic mouse comprising a homozygous disruption in a sulfotransferase gene, wherein the transgenic mouse exhibits a behavioral abnormality.

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33. (New) The transgenic mouse of claim 32, wherein the mouse exhibits aggressive behavior.

34. (New) The transgenic mouse of claim 32, wherein the mouse exhibits hyperactivity.

35. (New) The transgenic mouse of claim 32, wherein the mouse exhibits decreased anxiety.

36. (New) A method of producing a transgenic mouse comprising a homozygous disruption in a sulfotransferase gene, wherein the transgenic mouse exhibits at least one of the following behaviors: aggressive behavior, hyperactivity, increased activity or decreased anxiety, the method comprising:

(a) introducing a sulfotransferase gene targeting construct into a cell;

(b) introducing the cell into a blastocyst;

(c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

(d) breeding the chimeric mouse to produce the transgenic mouse comprising a disruption in a sulfotransferase gene.

37. (New) A cell or tissue isolated from the transgenic mouse of claim 32.

38. (New) A transgenic mouse comprising a heterozygous disruption in a sulfotransferase gene, wherein, upon breeding, produces a transgenic mouse homozygous for a disruption in a sulfotransferase gene exhibiting a behavioral abnormality.

39. (New) A cell or tissue isolated from the transgenic mouse of claim 38.

REMARKS

I. Amendments

Claims 1-10 and 17-21 are canceled and new claims 26-39 are added. The newly added claims do not add new matter and are completely supported throughout the application as originally filed. More particularly, newly added claims 26-30 directed to targeting constructs, methods of producing the targeting construct, and transformed cells are supported, for example, at page 2, lines 27-34, at page 14, line 12 through page 19, line 28, and in Examples 1-3 beginning on page 55, line 10 of the specification. Additionally, support for newly added claims 31-37 directed to a transgenic mouse comprising a homozygous disruption in a sulfotransferase gene and a method of producing said transgenic mouse, and to cells and tissues isolated from the transgenic mouse may be found, for example, at page 19, line 29 through page 21 line 18, in Example 4 at page 59, line 24 through page 60, line 27, and at page 39, line 32 through page 40, line 8 of the specification. Lastly, newly added claims 38-39 directed to a transgenic mouse comprising a heterozygous disruption in a sulfotransferase gene, and cells and tissues isolated from the transgenic mouse is supported, for example, at page 21, lines 13-18 of the specification.

The amendments to the claims are made without prejudice to the pending or now canceled claims or to any subject matter pursued in related applications. Moreover, the amendments are made solely to expedite prosecution of the application and are not intended to limit the scope of the invention. Applicants reserve the right to prosecute any canceled subject